# Scope of Work

## **Assumptions**

In responding to the MS4 Administrative Solution RFP, CDM has taken the following assumptions:

- The highest priority is the implementation of a system to collect data and produce the necessary reports for the submittal of the Annual Report.
- The implementation of the MS4 Administrative Solution will be accomplished over the first two years.
- CDM's base price includes all Web server software and maintenance costs associated with hosting the MS4 Administrative Solution for the next five years. The Web server hardware cost is included as an optional cost.
- The Web server software is being provided in the first year, and its cost is being recovered by CDM over the project duration of five years to meet the District's projected cash flow.\_If the project schedule is reduced or eliminated, we expect complete compensation for the software costs incurred.
- Optional modules may be selected after a needs assessment and an application selection have been performed before being implemented.
- The data collected for the Permit program from individual Co-Permittees will be stored in a central location.
- The District has the networking infrastructure hardware and software to support access to the Web site.
- The District will make available to CDM the necessary staff to review and approve submitted documents and system prototypes.
- The District can procure from a local phone company a wireless WAN (CDPD or 3G) support.
- The license fees for the database and ArcIMS are based on a maximum of 20 concurrent users.

#### Work Plan

The following presents the work plan for implementation of the MS4 Solution.

#### **Project Initiation**

CDM will lead a project "kick-off" meeting to accomplish the following:

- Identify project goals;
- Educate the participants about pertinent implementation topics;
- Clarify project roles;
- Gather information for the Modules 1 and 2;
- Define a review process;
- Agree on a project schedule; and
- Assess the existing hardware, software, and network design at the District.

CDM will prepare a memorandum summarizing the meeting(s) and provide other notes throughout this project. These meeting notes will serve as the acceptance criteria for the project.

### Module 1 - NPDES Permit Program

#### Milestone 1: Data Entry

To prepare Module 1 for Data Entry, CDM will perform the following tasks:

- Review the current permit for new data tracking and reporting requirements;
- Compare permit changes with the current MS Access data solution;
- Develop a new data model based on permit changes and the current MS Access data solution;

- Expand the new data model to accommodate additional functionality as directed in the RFP;
- Structure the data model for future integration into a comprehensive work management system;
- Meet with the District to propose the data model; and
- Revise the proposed data model based on District input.

Meetings and revisions will occur until the District is satisfied with the proposed data model for the NPDES Permit Program module.

**Security/User Input Forms.** CDM will meet with the District to define required security requirements, desired user administration levels, and review currently developed user interface forms. CDM proposes to use an in-depth review of the FDOT NPDES Reporting System as a starting point. CDM will complete the following tasks:

- Configure user administration levels and user forms based on District input;
- Review the current NPDES Permit Program module with the District and allow for Permittee review as defined in the agreed-upon Review Process;
- Incorporate changes based on District review; and
- Perform thorough QA/QC testing of the application.

### Milestone 2: Reporting and Data Queries

NPDES data reporting and additional data query capability is a critical element to the NPDES Storm water program module. CDM proposes to base the data reporting and query capability into three tiers.

*Tier 1.*\_ CDM will base initial reporting elements on the NPDES permit review and District-approved data model. CDM will perform the following:

- Revise the current MS Access database queries based on permit review;
- Migrate the MS Access database queries into the Web-based system; and
- Migrate the District's current MS Excel charts (as seen in the District NPDES Permit -Report) into Seagate Software's Crystal Reports (version 8.5 or greater).

The resultant system will allow users with defined access the ability to produce reports required by the NPDES Permit at any time.

**Tier 2.** CDM will build data export functions that allow program managers to export data from the NPDES Storm water module. Raw data exports will provide the District with total access to all data elements at any time needed. Data exports will allow the District to use the data as is and/or allow the District to sum, query, or chart the data using standard processing tools like Microsoft Excel, Microsoft Access, or Microsoft Word. CDM will develop links within the NPDES module whereby the District can download and save data locally for:

- Each table in the NPDES Module:
- Each guery used to produce NPDES Permit reports;
- New gueries yet to be defined that combine all data by city and reporting year; and
- Any additional download functionality that the District defines.

**Tier 3.** CDM will define new program management reports specifically targeted at tracking the Permittee data collection progress throughout the year. Program management reports will allow managers from the individual Co-Permittees, the Principal Permittee, and the stormwater program managers to review data collection progress throughout the permit year. CDM will perform the following:

- Develop example program management reports based on the major elements of the program (e.g.\_Industrial, Construction, etc.);
- Review these reports with the District;

- Revise these reports and develop additional reports based on District input;
- Define security levels with the District for accessing the program management reports; and
- Upon approval, add the program management reporting features to the NPDES module.

### Module 2 – Work Management

Work orders are the primary working tool for those who manage infrastructure for public works and utilities. Cityworks provides a means to create and track work order tasks, costs, employees, and other information relating to the work performed.

### **Milestone 3: Work Management Initiation**

This phase of the project will confirm the requirements for the applications while installing the database and Cityworks software. This installation will allow the District to start using Cityworks to test whether the system meets all requirements.

CDM will review Cityworks user requirements for the Work Management application with the District's project staff at the District's facilities using an interactive workshop. The focus of the workshop will be a review of any current work management and warehousing applications, assisting anticipated users of the applications to learn the available functionality, and helping all parties to understand how the individual Cityworks and GIS components can work together to achieve the desired results. Following this activity, CDM will install the Cityworks database and software and test the system.

### Milestone 4: Work Management Definition and Workshops

The following tasks will document the maintenance and work management processes used by the Permittees—. CDM proposes that that District provide a representative or small ad-hoc committee with a thorough understanding of these processes \_ It would be desirable if this person or committee also served as the main point of contact for CDM throughout the course of this implementation.

Prior to this task, CDM will have provided a simple questionnaire to the District's Project Manager, who will be responsible for distributing it to the appropriate Permittee and department representatives. Each representative will copy and distribute the questionnaire as needed and will later gather and combine all the results on to one copy of the questionnaire.

CDM understands that the Permittees have in place both a request- (reactive) and work order- (preventive) driven process. From this questionnaire, CDM will identify the following:

- Work order or request types (i.e. no water, odor, overflow, etc.);
- Whether the work order or request is preventive or reactive;
- Work tasks for each work order type (i.e. remove root, point repair, etc.);
- Employees and labor classifications in each department;
- Inventory (material) types;
- Major equipment types (i.e. vehicles, backhoe, etc.);
- Existing datasets (GIS and otherwise) used or slated to be used in the work order or request process; and
- Samples of service request and work order printout forms.

After reviewing the results of the questionnaires, CDM will conduct a Maintenance Process Workshop with the department representatives. The purpose of this workshop is to confirm the information gained through the Maintenance Process Questionnaire and to understand the work and data flow in and out of the proposed system. Using that information, CDM and the department representative will identify the hierarchy of work orders/requests

and their tasks; the default equipment and labor to be used; the default time period for such tasks; and the GIS activities that are used for this process.

# **Milestone 5: Cityworks Configuration**

Using the information gained from Milestones 3 and 4, CDM will implement modifications to the Cityworks work management database. CDM will work in cooperation with the District's staff to prepare this data for use within the Cityworks environment. The Work Order and Service Requests printout forms will be configured as agreed to by CDM and the District during Milestone 4, as provided by standard Cityworks configuration options.

Once the above databases have been configured, CDM will participate in an on-site workshop to review with the District. In an effort to minimize costs, CDM's goal is to provide the District with databases configured to the specifications derived from the questionnaire and the on-site workshops. If any new updates to Cityworks or related software configuration issues exist, CDM can assist in addressing them during this visit.

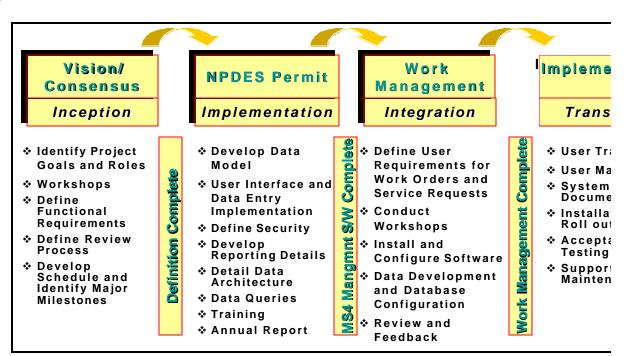
### Milestone 6: Cityworks System Rollout & Training

CDM will configure and load all materials and software on the databases required for training. CDM has the experienced personnel to train the District's staff in using the Cityworks system. CDM will develop a curriculum and provide complete on-site training for all software modules and products supplied to the District. CDM will provide five business days of training to the District users. The location for training is to be set up and provided by the District, with the area large enough to contain 18 computers, users, and two instructors with a table, computer, projector, and training materials.

Cityworks training is modular.\_Users attend those sections that are relevant to the type of work that they perform. All courses include relevant materials and sample data.\_The District will need to identify candidates for training that currently participate in the work order process.\_In advance of the training, each student who is to participate in training must have basic PC literacy and ArcView training or experience.\_Details of training sessions are provided in the next section, Program Considerations.

# Milestone 7: Work Management and Permit Program Integration

Following the implementation of Modules 1 and 2 (NPDES Permit Program and Work Management), CDM will integrate their databases.



Note: Traini ng to be coor dinat ed with the MAP PS traini ng progr am.

# **Program Considerations**

#### Database Administration

The Integrated MS4 Administration Solution functions are centrally managed through a set of user and group permissions. Access is managed through the system administration program where administrators can set users, groups, and their permissions through a simple interface. Access to all forms in the system can be managed through this window.

#### General Issues and Functionalities

### **Implementation Strategy and Support Services**

CDM will host the Web-based portion of the application for the first five years after project start. By hosting the Web application, CDM will be able provide the most efficient development service, shortest down time, and proper management of database replication. Monthly maintenance fees will be assessed as a result of the incurred costs of maintaining the database and the Web server related to software, hardware, and personnel labor costs. The server will be located at a secure site that specializes in shared rack mounted server co-locations and includes "uninterrupted power supply" (UPS) and temperature and humidity control. After the first year, the District will have the option to purchase the server outright and host it within a District facility or other service provider.

# **Operations during System Down Time**

The secure server site proposed for this project provides "uninterrupted power supply" (UPS). CDM will provide a redundant system consisting of separate application and database servers. CDM's maintenance plan customarily provides a three-hour response to incidents.

Client Devices (desktop computers) can be set up to persist the data locally in the case of server interruption so that no loss of information occurs unless the machine is shut down.

#### Transfer of Data

CDM supports a nationwide frame relay at 256 KBS. Internet connections consist of multiple, redundant, dedicated T1 lines. The system supports HTTP (Hypertext Transfer Protocol) and FTP (File Transfer Protocol).

#### Solution Security

Firewalls will be installed on the servers to deny unauthorized access to the database. The RSA SecureID system provides advanced security for Web users. The system depends on the use of a Key card with a changing number, plus the knowledge of a personal identification number (PIN). The Key card safeguards the system so that even if the card is lost, the computer stolen, or the PIN compromised, an intruder still will not have access to the Web site.

#### **Backup and Restore Procedures**

The secure server site includes daily backup up to 2GB for the host server. In addition, CDM will\_preserve monthly, quarterly, and yearly archival backups. Backup and restoration times will vary depending upon the size of the files and whether the specified tape is located on or off site.

# Connectivity

CDM expects to work via HTTP via the Internet.

### Training/Education

CDM will provide five business days of training to the District users. Training workshops that will accommodate up to 18 users, using computers provided by the District and configured with the District's datasets. The location for training is to be set up and provided by the District, with the area large enough to contain 18 computers, 18 students, and two instructors with a table, computer, projector, and training materials. The District will provide a projection screen and a projector that supports 1024x768 high-resolution.

Cityworks training is modular. Students attend those sections that are relevant to the type of work that they perform. All courses include relevant materials and sample data. The District will need to identify candidates for training that currently participate in the work order process. In advance of the training, each student who is to participate in training must have basic PC literacy.

Module	Title
Service Requests	Cityworks Service Requests - Creating and processing
(1 day, 2 sessions)	service requestsAdding labor, submitting, searching,
	canceling, closing, combining, geo-locating, and reports.
	Associating to projects and work orders.
Work Orders	Cityworks Work Orders - Creating and processing work
(2 days, 2 sessions)	orders and tasks. Adding labor, material, and equipment.
	Submitting, searching, canceling, closing, scheduling,
	repeating, geo-locating and reportsAssociating to
	projects and service requests.
Designer and System	Cityworks Designer and System Administration -
Administration	Covers system and database administration issues such
(1 day)	as software installation, user accounts, security, code table
	creation, work order and service request templates, and
	resource (labor, material, equipment) hierarchies and table
	creationIncludes a review for GIS personnel as well;
	covers items needed to successfully manage the setup
	and maintenance of the GIS for Cityworks use.

#### **Maintenance Agreements**

On-line and telephone support for the Work Management solution is available from Azteca Monday through Friday during normal business hours. For on-line support, Azteca requests secure outside access, via a telephone line, to the District's system. Additional support is available at mycityworks.com Website. The Update and Support agreement from Azteca will supply you with all subsequent upgrades, enhancements and bug fixes for all future releases of the licensed applications as long as the District annually renews the agreement. Included with this proposal are 90 days of complimentary update and support. This support can be continued as part of an on-going Update and Support Agreement.

### **Documentation**

The project team will provide a complete set of user documentation to the District's users. The solution will also provide on-line help that is constructed in a familiar "Windows" help format. Help includes a hypertext contents, searchable index, and a keyword search.

#### Platform and Hardware

CDM estimates that server hardware necessary for this project will include an RSA authentication server, an ArcIMS server, and a Web server. Other hardware that may be necessary, based on further review of the District's needs, are an Oracle server and SecureID cards for the security system.

CDM will outfit the 18 permittees with electronic field data collection capability. The electronic field data collection process will be modeled after work flows and paper forms in order to minimize changes to current work environments. In addition, the data collection tool will enable staff to synchronize field data with the central MS4 database. Specifications for field data collection hardware and software will be mutually agreed upon between the DISTRICT and CONSULTANT before either are purchased and provided.

Based on the workstation specifications outlined in the RFP, CDM will use Internet Explorer 6.0 to access the application. This provides for the greatest level of flexibility, and is provided free from Microsoft.

### User Interface and Data Entry

The proposed solution contains applications that are essentially tools that read and write data from standard data management systems. Both MS4 Management Software and Cityworks data are stored in Oracle. The database can run on either Unix or NT platforms. Client PCs can use the Windows 98, 2000 or NT operating system. Cityworks is programmed using Visual Basic, creating a consistent Windows look and feel.

All connectivity is handled through ODBC drivers. The term ODBC stands for "open database connectivity" - a standardized application programming interface (API) technology that allows the proposed applications to access multiple third-party databases. ODBC-enabled applications (also known as "ODBC-compliant" or "ODBC client" applications) can concurrently access, view, and modify data from data sources, regardless of whether the source is hierarchical, object-oriented, or plain text.

### Miscellaneous Optional Services

CDM's Ontario office is located in the permit area and provides CDM with the ability to provide efficient and timely assistance to the Permittees. As a full-service environmental consulting engineering firm, CDM has the capabilities to provide assistance to the District and to the Co-Permittees with additional services listed under Miscellaneous Services in the RFP, at additional cost contracted individually.

#### **Collection of Data**

CDM can be individually contracted to perform data collection and data entry services related to this project. While many of the Permittees will elect to perform these services with municipal staff, some may find that hiring CDM to perform this task will free municipal staff to address priority assignments. CDM's knowledge of the Permittees and our familiarity working with municipal agencies allows us to perform these services in an efficient and professional manner.

#### Implementation and Installation of the Proposed Solution

CDM's proposal includes a substantial level of implementation and installation of the solution. Should there need to be an expansion of the proposed scope in this area, CDM can be contracted to assist with these services.

#### Advanced Customization of the Solution to Integrate with other Third Party Solutions

CDM is familiar with a number of third party solutions to the optional elements of this RFP, and can be contracted to develop and to implement integration strategies.

### Management Services to Manage Solution Implementation

CDM's proposal includes a basic level of management services to implement the solution. However, additional services to provide additional implementation management can be contracted.

### **Project Schedule**

The duration of the project shall be five years from the date of the notice to proceed. As part of project initiation activities, a detailed schedule, including development, review, and implementation milestones will be developed.